

Weekly Report – week of February 21, 2011
Fabrication and Assembly of ERL hardware
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Cryogenics: The installation of the cryogenic transfer lines along with wiring of level and temperature sensors to support the ERL and VTF cryo refrigerator continues to make good progress. The piping for pulling a vacuum along with a pressure burst disc and flow meters is nearing completion for the LBH.

Laser: Low power alignment of autocorrelator continues. The initial estimates for supplemental cooling of the laser room came in high and alternatives are being looked into. Still working towards getting the pulse measurement setup: low power alignment was done last week, now working with C-AD Controls group on control issues for that.

FPC conditioning: Received electronics from CERN to automate RF processing of input couplers.

Photocathode: Drawings for the modification of the UHV cathode transporter are very close to being finalized. A number of parts for the modification have been ordered. Both transport carts are at BNL and are being evaluated for what parts can be used in the modified version of the cathode transporters. The antimony source in the deposition system has been filled with new antimony. A new sample made of S.S. was installed in the deposition system and has been deposited with antimony following the latest procedure.

Gun Cryomodule: The gun cavity / helium vessel assembly has arrived at BNL and is going together using the tooling for the mock-up.

PASS System: a modification has been implemented to allow operations of the 1MW Klystron and the FPCs in the ERL Block enclosure. The wiring modifications require drawing changes and approvals along with re-certification of the ERL PASS System. The PASS system for the LBH will continue with circuit testing and certification to follow. The VTF PASS system will continue to make progress as man-power is available and schedule permits.

Mezzanine: proposed modifications have been finalized along with a proposed clean room area. A statement of work for the clean room has been reviewed and additional comments have been included. The parts and materials for the mezzanine modification have been ordered. The top plate pass through sleeve for the mezzanine is nearing completion in our central shops.

Large Grain Gun: The 28" Dewar top plate has been unpacked and inspected for proper flange orientation and penetrations in baffles. Design drawings for the 28" dewar transport cart and support frame for assembly of the top plate are nearing completion. The flange adapter for the level probe in the top plate is complete.

5-cell cavity/cryomodule: Simulations show that NbTi flange with AlMg seal is not suitable choice for CW operation of the 5-cell cavity due to thermal run-away. The outcome of the SPL cavity analysis meeting at AES has left AES with a number of action items (i.e. investigate high electrical and magnetic fields, heat loads and cost estimates for 41mm HOM port pull, etc.) Preparations are being made to receive a copper model from AES, began assembly of the bead-pull measurement setup.

ERL injection line: Vacuum envelope is in preparation to final review, correction magnets are under design.

ERL Extraction line: Magnets are being fabricated, beam dump pressure vessel code compliance under evaluation, vacuum/instrumentation layout needs to be reviewed and finalized.

ERL Tech Support Area: The EEBA area has been cleared out for the future construction of enclosed and conditioned ERL support staff support area. Design drawings and cost estimates have been completed. The BID packages have gone out for the construction of the enclosure and refurbishment of this area.